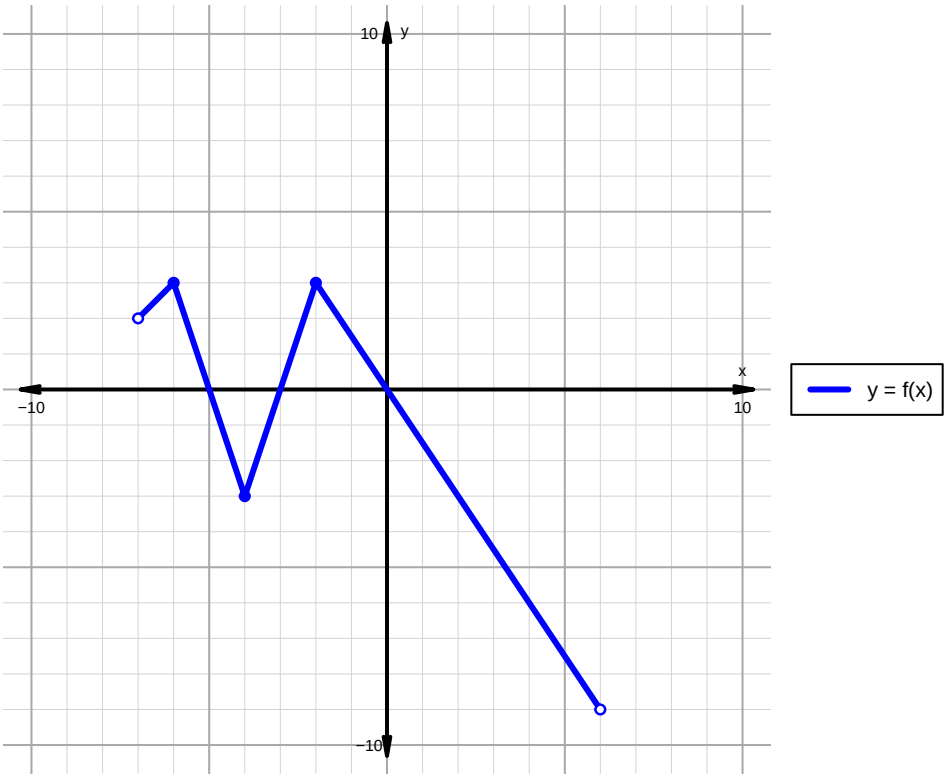
Name: Date:

Intervals, Transformations, and Slope Solution (version 18)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7,-5)\cup(-3,0)$
Negative	$(-5,-3)\cup(0,6)$
Increasing	$(-7,-6)\cup(-4,-2)$
Decreasing	$(-6,-4)\cup(-2,6)$
Domain	$(-7,6)$
Range	$(-9,3)$

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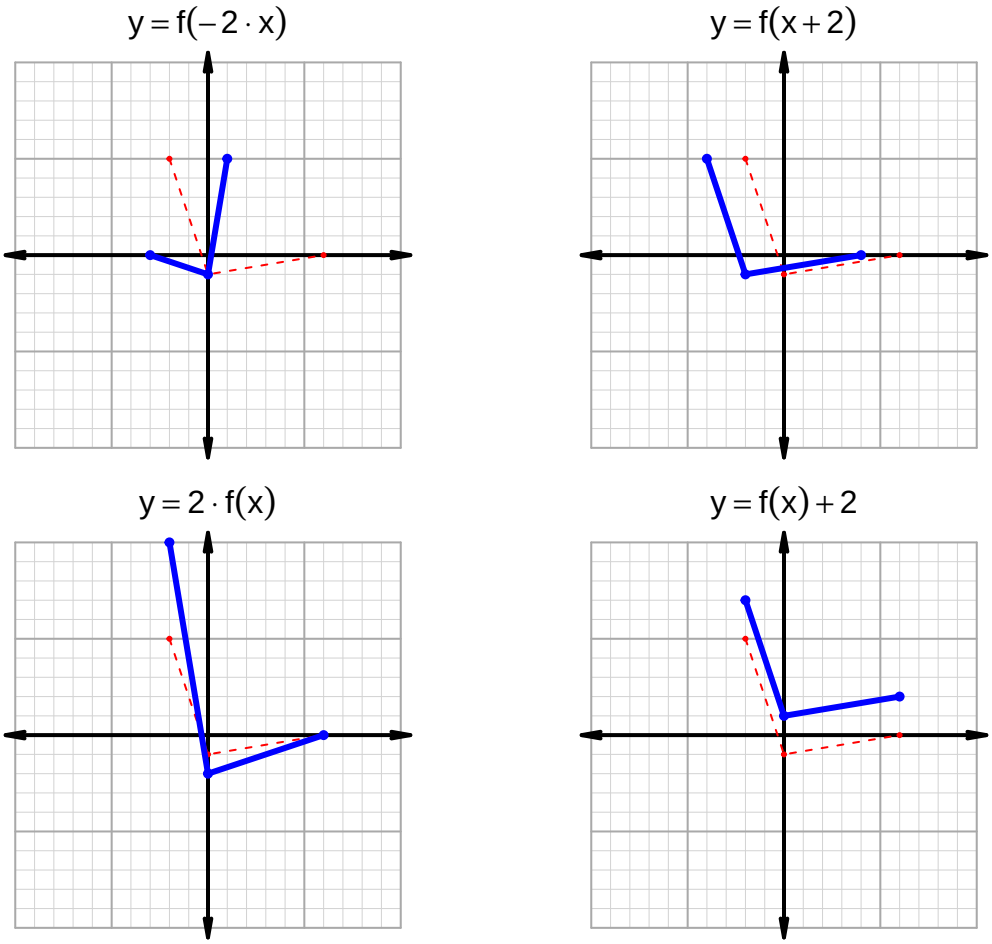
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 61$ and $x_2 = 76$. Express your answer as a reduced fraction.

x	$g(x)$
31	61
58	76
61	58
76	31

$\frac{f(76)-f(61)}{76-61} = \frac{31-58}{76-61} = \frac{-27}{15}$

The greatest common factor of -27 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{5}$$